

Testes volumes do not vary appreciably in my sample of 17 males. Only one of the six females contained enlarged ovarian eggs. This female, collected on 29 September 1967, contained ten yolked follicles 8 mm in diameter, suggesting a large clutch size in this species.

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TRIAL EXCAVATION IN A SMALL CAVE, GINGIN

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INTRODUCTION

The small searp defining the summit of Poison Hill and neighbouring hills in the Gingin district includes numerous small recesses or caves in which one might expect various animals and perhaps Aborigines to shelter. After discussion with Dr. D. Merrilees (Western Australian Museum), I decided to excavate a small exploratory trench across the mouth of one of these small caves to look for signs of such occupation. To safeguard the deposit for future study, I adopted the precautions suggested by Merrilees (1968).

The site chosen was a small cave near the origin of the north branch of Wallering Brook, about 500 metres approximately south east from "Koorian" homestead, and just north of Poison Hill.

THE EXCAVATION

The cave had been used as a shelter by sheep which had left a thick layer of droppings. These were removed to a depth of about 5 cm over the area to be excavated, about 3 m long and $\frac{1}{2}$ m wide, through the entrance to the cave. Soil was removed from the trench by trowelling off thin layers, and was sieved through a small sieve of about 1 $\frac{1}{2}$ mm mesh. All bone, all stone suspected of being foreign to the site, and samples of plant and other organic debris remaining on the sieve and of soil were retained and are lodged in the Western Australian Museum (specimen Nos. 70.1.3 to 70.1.38, A 17554, A 17556), as are my field notes.

I recognized two divisions in the excavation, Layer 1 (the top 15 cm) and Layer 2, the lower part of the trench which reached bedrock at a depth of about 25 cm at the inner end of the trench and about 120 cm at the mouth of the cave. Thus the cave floor sloped up towards the back of the cave. Charcoal and various other plant remains, many of which would be identifiable, occurred throughout the deposit, and so did small pellets taken to be rat droppings. Layer 1 was richer in organic debris, especially bone, than Layer 2. A burrow had penetrated Layer 2.

Bone in Layer 1 represented sheep, rabbit, lizard and the following native mammals, names and classification following Ride (1970):—Boodie (*Bettongia lesueur*), Common Ringtail (*Pseudocheirus peregrinus*), Brush Possum (*Trichosurus vulpecula*), two small carnivorous marsupials (*Antechinus* cf. *A. flavipes* and *Sminthopsis* sp.), and Blunt-faced Rat (*Pseudomys shortridgei*), together with a small murid, probably the Ashy-grey Mouse (*Pseudomys albocinereus*) and a larger murid, a species of *Rattus* which might or might not be native.

Bone in Layer 2 represented Common Ringtail, Quenda (*Isoodon obesulus*), the same two species of small, carnivorous marsupials as in Layer 1, Ashy-grey Mouse, probably Blunt-faced Rat, a species of *Rattus*, and lizard.

A quartz flake of freshly broken appearance, about 1 cm long, was found in Layer 1 at a depth of 13 cm, and a similar one in Layer 2 at 30 cm. These appear to be struck flakes.

DISCUSSION AND CONCLUSIONS

The small quartz flakes suggest that Aborigines used the cave, though probably not since the area was cleared for farming about 1900-1905. The mammals found were predominantly native, which also suggests early, perhaps prehistoric use of the cave if the mammal remains represent human food. Residents of long standing in the district inform me that various native mammals persisted long after European occupation, until the arrival of foxes about 1920. Among these were Boodies, Dalgies (*Macrotis lagotis*), Water Rats (*Hydromys chrysogaster*) and Quokkas (*Setonix brachyurus*) locally known as Bunk-ups, which lived among rushes along the banks of Gingin Brook and on islands in the brook. A few native mammals, such as Brush Possums and Echidnas (*Tachyglossus aculeatus*) are still seen occasionally. It is possible that the mammal remains excavated were taken there by some predator, in quite recent times.

This cave may merit further study, in spite of possible stratigraphic disturbance by rabbits or other burrowers. It is possible that it contains human occupational debris. Plant, insect and mammal remains might throw some light on climatic changes, and there is an abundance of charcoal for dating.

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AVIAN BATHING BEHAVIOUR

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There is little available information on the amount of time or the frequency with which wild birds indulge in bathing and other maintenance behaviour. The small amount of present knowledge is derived mainly from aviary studies or contrived situations.

A good example of the latter is the note by Stranger (1970) on White-backed Swallows, *Cheramoeca leucosternum*, presumably bathing in the